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Appl. No. 10/071,244
May 6, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for controlling a received signal level in a microwave, time division multiple access (TDMA), point-to-multi-point (PmP), radio communications system, wherein a node receiver includes an outdoor unit coupled to an antenna and to an indoor unit, the indoor unit including a demodulator, the node receiver also including a fast AGC and a slow AGC, and wherein the slow AGC is updated using peak amplitude information from both an outdoor unit measurement point associated with an input from the antenna and an indoor unit measurement point associated with an input to the demodulator ~~the node receiver~~.

2. (Previously Presented) The control method as claimed in claim 1, wherein the AGC employed in the node receiver is quickly re-configurable, accurate, and stable .

3. (Previously Presented) Control method as claimed in claim 1, wherein the fast AGC has high accuracy and a fixed gain, and the slow AGC has high accuracy and stability with respect to changes in attenuation.

4. (Canceled).

5. (Previously Presented) The control method as claimed in claim 1, wherein the receiver node activates a radio control loop for each of multiple remote access terminals to control a transmit power level of each remote access terminal.

6. (Currently Amended) ~~Control~~ A control method for a signal level in a point-to-point-multipoint microwave time division multiple access (TDMA) radio-communication ~~systems,~~ system of the type where a radio control loop is activated from a common radio node to regulate the transmitted signal power level of a plurality of remote access terminals, said node including a

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local control loop comprising an AGC, wherein said local control loop in said node is activated through a fast AGC used as a dynamic buffer to adjust the signal power level of each individual terminal input in a demodulator of the node during a fast transient of the signal level and is able to discriminate a single terminal signal, and wherein the local control loop allows a reduced number of control messages to be transmitted in the radio control loop to each of the remote access terminals ~~a slow AGC balancing the changes in gain of the reception chain of the node.~~

7. (Currently Amended) The control method as in claim 6, wherein ~~the slow AGC has a dynamic range smaller than the fast AGC and a response time > 50 ms~~ said node includes a slow AGC common to all of the remote access terminals that balances changes in gain of the reception chain of the node for all of the remote access terminals.

8. (Currently Amended) The control method as in claim 6, wherein the operative bandwidths of the slow AGC control loop, the fast AGC control loop, and the radio control loop are sufficiently distinct in order to ensure stability of the system.

9. (Currently Amended) The control method as in claim 6, wherein said radio node comprises an outdoor unit and an indoor unit, wherein the slow AGC is implemented in the indoor unit of the radio node and is updated using the peak amplitude information of the signal received by the node.

10. (Previously Presented) The control method as in claim 9, wherein said peak amplitude information is obtained by comparing peak information of the signal measured in said outdoor unit with respect to the one measured in the indoor unit.

11. (Currently Amended) A radio node for use in a radio communication system, comprising:

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a radio control loop for regulating a power level of a signal transmitted by each of plural remote access terminals to the radio node;

a demodulator;

a fast AGC for individually adjusting a signal power level of a signal received from each one of the remote access terminals before input to the demodulator, wherein the individual signal power level adjustment for one of the remote access terminals is different than the individual signal power level adjustment for another of the remote access terminals; and

wherein the fast AGC allows a reduced number of control messages to be transmitted in the radio control loop to each of the remote access terminals~~a slow AGC, coupled to the fast AGC, for balancing gain changes in a receiving chain of the radio node for all of the remote access terminals.~~

12. (Currently Amended) The radio node as in claim 11, wherein a slow AGC, coupled to the fast AGC, for balancing gain changes in a receiving chain of the radio node for all of the remote access terminals~~the slow AGC has a dynamic range smaller than the fast AGC and a response time greater than 50 ms.~~

13. (Currently Amended) The radio node as in claim ~~11~~12, wherein bandwidths of the slow AGC, the fast AGC, and the radio control loop are sufficiently distinct in order to ensure stability.

14. (Currently Amended) ~~The radio node as in claim 11, further comprising:~~ A radio node for use in a radio communication system, comprising:

a radio control loop for regulating a power level of a signal transmitted by each of plural remote access terminals to the radio node;

a demodulator;

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a fast AGC for adjusting a signal power level of a signal received from each one of the remote access terminals before input to the demodulator;

a slow AGC, coupled to the fast AGC, for balancing gain changes in a receiving chain of the radio node for all of the remote access terminals; and

an outdoor unit and an indoor unit,

wherein the slow AGC is implemented in the indoor unit and is configured to be updated using peak amplitude information of the signal received by the radio node.

15. (Previously Presented) The radio node as in claim 14, further comprising:

means for obtaining the peak amplitude information by comparing peak amplitude information measured in the outdoor unit with peak amplitude information measured in the indoor unit.

16. (Previously Presented) The radio node in claim 15, further comprising:

a fixed gain simplifier in the outdoor unit, and

means for obtaining the outdoor peak amplitude information from an output of the fixed gain amplifier.

17. (Currently Amended) A radio node for use in a radio communication system, comprising:

radio control loop means for regulating a signal power level transmitted from each of plural remote access radio terminals to the radio node, and

a receiver chain including:

demodulator means for demodulating signals received from each remote access terminal;

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fast AGC means for individually adjusting a signal power level of a signal received from each remote access terminal before input to the demodulator means, wherein the individual signal power level adjustment for one of the remote access terminals is different than the individual signal power level adjustment for another of the remote access terminals;

~~slow AGC means for balancing gain changes in the receiver chain based on the signals received from all the remote access terminals.~~

18. (Currently Amended) The radio node in claim 17, further comprising:

slow AGC means for balancing gain changes in the receiver chain based on the signals received from all the remote access terminals~~wherein the slow AGC means has a dynamic range smaller than the fast AGC means and a response time greater than 50 ms.~~

19. (Currently Amended) The radio node as in claim ~~17~~18, wherein bandwidths of the slow AGC, the fast AGC, and the radio control loop are sufficiently distinct in order to ensure stability.

20. (Currently Amended) The radio node as in claim ~~17~~18, further comprising:

an outdoor unit and an indoor unit,

wherein the slow AGC is implemented in the indoor unit and is configured to be updated using peak amplitude information of the signal received by the radio node.

21. (Previously Presented) The radio node as in claim 20, further comprising:

means for obtaining the peak amplitude information by comparing peak amplitude information measured in the outdoor unit with peak amplitude information measured in the indoor unit.

22. (Previously Presented) The radio node in claim 21, further comprising:

a fixed gain simplifier in the outdoor unit, and

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means for obtaining the outdoor peak amplitude information from an output of the fixed gain amplifier.

23. (New) The control method in claim 7, wherein the slow AGC has a dynamic range smaller than the fast AGC and a response time >50 ms.

24. (New) The control method in claim 6, further comprising:
setting a reference value for said fast AGC in the node,
issuing a control message in the radio control loop when there is a difference between a current fast AGC level and the reference value.

25. (New) The radio node in claim 12, wherein the slow AGC has a dynamic range smaller than the fast AGC and a response time greater than 50 ms.

26. (New) The radio node in claim 11, wherein the radio control loop is configured to issue a control message in the radio control loop when there is a difference between a current fast AGC level and a reference value.

27. (New) The radio node in claim 18, wherein the slow AGC means has a dynamic range smaller than the fast AGC means and a response time greater than 50 ms.

28. (New) The radio node in claim 17, wherein the radio control loop means includes means for issuing a control message in the radio control loop when there is a difference between a current fast AGC level and a reference value.